

TECHNOLOGY ASSESSMENT AND FORECAST REPORT
ELECTRICAL CLASSES

1977 - December 1999



May 2000
U.S. PATENT AND TRADEMARK OFFICE
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A TECHNOLOGY ASSESSMENT AND FORECAST REPORT

Technology Profile Report - ELECTRICAL Classes

Explanation of Data

This Technology Profile Report profiles the patent activity for U.S. utility patents * granted between **1977** and **December 1999** in ELECTRICAL technology discipline classes within the U.S. Patent Classification System (USPCS).

The report is generated by identifying appropriate Patent and Trademark Office (PTO) classes, i.e., those entirely or substantially pertinent to the technology discipline of interest. The patents in these classes are then included in the profile. This procedure results, in most cases, in the inclusion of the majority of patents relevant to the technology discipline and few, if any, patents which are not relevant. However, any patent listing provided should not be considered to be inclusive of all relevant patents, nor exclusive of all irrelevant patents.

Data Distribution By Date of Grant and By Date of Application

Parts A1 and A2

Part A1 distributes utility patent GRANT data by year of patent grant ("Patents Granted By Date of Patent Grant"). Part A2 distributes patent GRANT data by the year in which the patented application was filed ("Patents Granted By Date of Patent Application"). Parts A1 and A2 each provide patent counts (pages A1-1 and A2-1) and percent distributions (pages A1-2 and A2-2).

Patent data, as shown in the "**Pre 1986**" column, correspond to selected patents * in the data base which were granted during the period **1977 to 1985**.

Part B

Part B of this report distributes patent GRANT data for organizations that have received U.S. patents since 1977. Data are presented by the year in which the patent was granted ("Patents By Year of Grant") and the year the patented application was filed ("Patents by Year of Application").

DATA FOR THOSE APPLICATIONS WHICH WERE FILED BUT NEVER ISSUED (ROUGHLY 40% OF TOTAL FILINGS) ARE NOT INCLUDED IN THIS REPORT.

Since the average time period between filing for a patent and the issuing of the patent (i.e., a patent's "pendency") is now about 24 months, the patented application data for applications filed from **1997** to **DECEMBER 1999** are incomplete.** This is because a significant number of the applications filed from **1997** to **DECEMBER 1999**, which will ultimately become patents, were still pending in **DECEMBER 1999**. Since they had not yet become patents at the time this report was prepared, they were not included in this report.

Patented application data are of significant value since the date an application was filed more accurately reflects when the technology was developed. Additionally, fluctuations in data based on application date are much more likely to reflect changes in technological activity, since such fluctuations would for the most part be immune from changes in PTO processing

such as occurred in 1986 when the PTO issued fewer patents than would normally have been expected due to a lack of funds to print patents. Note that a patent's "pendency" can be quite variable from one patent to another thereby affecting the date of patent grant. Such variation in pendency is determined by many factors, including PTO workload (which varies between technologies), budget and manpower levels, patent printing schedules, etc.

"**Patents Granted By Date of Patent Application**", as shown in the "**Pre 1986**" column, correspond to patent grants in the report which were filed prior to **1986**.

Parts of the Report

Parts A1 and A2 present tables which show, by number and percent, the patent activity in the technology discipline. Part A1 presents data by year of patent grant ("Patents Granted By Date of Patent Grant"). Part A2 redistributes grant data by year of patent application ("Patents Granted By Date of Patent Application"). The location of patent origin is determined by the residence of the first-named inventor at the time of grant.

Patent ownership information reflects ownership at the time of patent grant and does not include subsequent changes in ownership. If more than one assignee was declared at the time of grant, the patent ownership is attributed to the first-named assignee. The U.S. and Foreign Corporations ownership categories count predominantly corporate patents; however, patents assigned to other organizations such as small businesses, nonprofit organizations, universities, etc. are also included in this category. While U.S. Government patent ownership includes only patents granted to the Federal Government, no such distinction is made for the Foreign Government ownership category.

Part B is a ranked listing of national and international organizations (i.e., corporations, universities, government agencies) which have received U.S. patents since **1977**.* Data line 1 for each listed organization ("Patents By Year of Grant") distributes counts of patent grants by year of grant. Data line 2 for each organization ("Patents By Year of Application") redistributes those same patent grants by year in which the patented applications were filed. Information on patent ownership reflects ownership at the time of patent grant. Although a substantial effort has been made to combine name variations into a single organizational name, many organizations continue to have patents listed under more than one organizational name.

* The term "patent", as used above, refers to "utility" patents. Other patent documents (i.e., design, plant and reissue patents, statutory invention registrations, defensive publications) are not included in this profile report.

** As of 12/31/99, utility patent application data are approximately 79% complete for utility patent applications filed in 1997 and 21% complete for applications filed in 1998. They are essentially complete for applications filed prior to 1997.

CHEMICAL, ELECTRICAL, MECHANICAL CLASSES

DECEMBER 1999

CHEMICAL	8	23	44	48	51	55	65	71	75	95	96	106	117	127
	136	148	149	156	159	162	196	201	202	203	204	205	208	209
	210	216	252	260	261	264	376	419	420	422	423	424	426	427
	428	429	430	435	436	438	442	501	502	504	507	508	510	512
	514	516	518	520	521	522	523	524	525	526	527	528	530	532
	534	536	540	544	546	548	549	552	554	556	558	560	562	564
	568	570	585	588	800	930	976	987						

The following subclasses are also Chemical:

134/1-42; 131/274-279; 505/100-126, 300-512, 725-785, 800-824, 951

ELECTRICAL	174	178	191	200	218	219	235	250	257	290	307	310	313	314
	315	318	320	322	323	324	326	327	329	330	331	332	333	334
	335	336	337	338	340	341	342	343	345	346	348	349	355	358
	360	361	362	363	364	365	367	368	369	370	371	372	373	375
	377	378	379	380	381	382	383	386	388	392	395	396	399	455
	503	505	700	701	702	704	705	706	707	708	709	710	711	712
	713	714	902											

The following subclasses are also Electrical:

84/600-746; 385/1-52; 359/1-195, 237-361, 558-590, 901-902; 968/876-977; 984/300-398

MECHANICAL	2	4	5	7		12	14	15	16		19	24	26	
	27	28	29	30	33	34	36	37	38	40	42	43	47	49
	52	53	54	56	57	59	60	62	63	66	68	69	70	
	72	73	74	76	79	81	82	83	84	86	87	89	91	92
	99	100	101	102	104	105	108	109	110	111	112	114	116	118
	119	122	123	124	125	126	128		131	132	134	135	137	138
	139	140	141	142	144	147	150	152	157	160	163	164	165	166
	168	169	171	172	173	175	177	180	181	182	184	185	186	187
	188	190	192	193	194	198	199	206	211	212	213	215	217	220
	221	222	223	224	225	226	227	228	229	231	232	234	236	237
	238	239	241	242	244	245	246	248	249	251	254	256	258	266
	267	269	270	271		273	276	277	278	279	280	281	283	285
	289	291	292	293	294	295	296	297	298	299	300	301	303	305
	312	347	351	352	353	356	359	366	374	384	385	400	401	402
	403	404	405	406	407	408	409	410	411	412	413	414	415	416
	417	418	425	431	432	433	434	439	440	441	445	446	449	450
	451	452	453	454	460	462	463	464	470	472	473	474	475	476
	477	482	483	492	493	494	600	601	602	604	606	607	623	901
	968	984												

The following subclasses are also Mechanical:

209/3.1-3.3, 44-44.4, 509-707, 900-942; 8/147-159

TECHNOLOGY ASSESSMENT AND FORECAST PROGRAM TECHNOLOGY DISCIPLINES FOR
U.S. PATENT CLASSIFICATION SYSTEM CLASSES AS OF DECEMBER 1999
CHEMICAL, ELECTRICAL, MECHANICAL

| Class |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 2M | 76M | 148C | 213M | 279M | 348E | 409M | 476M | 602M |
| 4M | 79M | 149C | 215M | 280M | 349E | 410M | 477M | 604M |
| 5M | 81M | 150M | 216C | 281M | 351M | 411M | 482M | 606M |
| 7M | 82M | 152M | 217M | 283M | 352M | 412M | 483M | 607M |
| 8C* | 83M | 156C | 218E | 285M | 353M | 413M | 492M | 623M |
| 12M | 84M* | 157M | 219E | 289M | 355E | 414M | 493M | 700E |
| 14M | 86M | 159C | 220M | 290E | 356M | 415M | 494M | 701E |
| 15M | 87M | 160M | 221M | 291M | 358E | 416M | 501C | 702E |
| 16M | 89M | 162C | 222M | 292M | 359M* | 417M | 502C | 704E |
| 19M | 91M | 163M | 223M | 293M | 360E | 418M | 503E* | 705E |
| 23C | 92M | 164M | 224M | 294M | 361E | 419C | 504C | 706E |
| 24M | 95C | 165M | 225M | 295M | 362E | 420C | 505E* | 707E |
| 26M | 96C | 166M | 226M | 296M | 363E | 422C | 507C | 708E |
| 27M | 99M | 168M | 227M | 297M | 364E | 423C | 508C | 709E |
| 28M | 100M | 169M | 228M | 298M | 365E | 424C | 510C | 710E |
| 29M | 101M | 171M | 229M | 299M | 366M | 425M | 512C | 711E |
| 30M | 102M | 172M | 231M | 300M | 367E | 426C | 514C | 712E |
| 33M | 104M | 173M | 232M | 301M | 368E | 427C | 516C | 713E |
| 34M | 105M | 174E | 234M | 303M | 369E | 428C | 518C | 714E |
| 36M | 106C | 175M | 235E | 305M | 370E | 429C | 520C | 800C |
| 37M | 108M | 177M | 236M | 307E | 371E | 430C | 521C | 901M |
| 38M | 109M | 178E | 237M | 310E | 372E | 431M | 522C | 902E |
| 40M | 110M | 180M | 238M | 312M | 373E | 432M | 523C | 930C |
| 42M | 111M | 181M | 239M | 313E | 374M | 433M | 524C | 968M* |
| 43M | 112M | 182M | 241M | 314E | 375E | 434M | 525C | 976C |
| 44C | 114M | 184M | 242M | 315E | 376C | 435C | 526C | 984M* |
| 47M | 116M | 185M | 244M | 318E | 377E | 436C | 527C | 987C |
| 48C | 117C | 186M | 245M | 320E | 378E | 438C | 528C | |
| 49M | 118M | 187M | 246M | 322E | 379E | 439M | 530C | |
| 51C | 119M | 188M | 248M | 323E | 380E | 440M | 532C | |
| 52M | 122M | 190M | 249M | 324E | 381E | 441M | 534C | |
| 53M | 123M | 191E | 250E | 326E | 382E | 442C | 536C | |
| 54M | 124M | 192M | 251M | 327E | 383E | 445M | 540C | |
| 55C | 125M | 193M | 252C | 329E | 384M | 446M | 544C | |
| 56M | 126M | 194M | 254M | 330E | 385M* | 449M | 546C | |
| 57M | 127C | 196C | 256M | 331E | 386E | 450M | 548C | |
| 59M | 128M | 198M | 257E | 332E | 388E | 451M | 549C | |
| 60M | 131M* | 199M | 258M | 333E | 392E | 452M | 552C | |
| 62M* | 132M | 200E | 260C | 334E | 395E | 453M | 554C | |
| 63M | 134M* | 201C | 261C | 335E | 396E | 454M | 556C | |
| 65C | 135M | 202C | 264C | 336E | 399E | 455E | 558C | |
| 66M | 136C | 203C | 266M | 337E | 400M | 460M | 560C | |
| 68M | 137M | 204C | 267M | 338E | 401M | 462M | 562C | |
| 69M | 138M | 205C | 269M | 340E | 402M | 463M | 564C | |
| 70M | 139M | 206M | 270M | 341E | 403M | 464M | 568C | |
| 71C | 140M | 208C | 271M | 342E | 404M | 470M | 570C | |
| 72M | 141M | 209C* | 273M | 343E | 405M | 472M | 585C | |
| 73M | 142M | 210C | 276M | 345E | 406M | 473M | 588C | |
| 74M | 144M | 211M | 277M | 346E | 407M | 474M | 600M | |
| 75C | 147M | 212M | 278M | 347M | 408M | 475M | 601M | |

*8/147-159 are mechanical

*84/600-746 are electrical

*131/274-279 are chemical

*134/1-42 are chemical

*209/3.1-3.3, 44-44.4, 509-707, 900-942 are mechanical

*359/1-195, 237-361, 558-590, 901-902 are electrical

*385/1-52 are electrical

*505/100-126, 300-512, 725-785, 800-824, 951 are chemical

*968/876-977 are electrical

*984/300-398 are electrical

May 19, 2000

cem1299.w60

USPTO, IPD-TAF Branch

Part A1
Patent Grants as Distributed By Year of Patent Grant

----- Patents Granted By Date Of Patent Grant (Granted: Jan 01, 1977 - Dec 31, 1999) -----

----- Pre 1986 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 Total -----

	112684	15870	20556	18973	24370	22380	24303	24483	25262	28287	29855	34366	33949	50168	51407	516913	
Total	63352	8041	9913	8905	11255	10521	11455	11386	11957	13756	14749	17427	17287	25554	26647	262205	
U.S. Origin	49332	7829	10643	10068	13115	11859	12848	13097	13305	14531	15106	16939	16662	24614	24760	254708	
Foreign Origin																	
JAPAN	23829	4458	6228	6018	8084	7571	8343	8834	8978	9722	9891	10875	10466	14974	14540	152811	
GERMANY	8280	1016	1362	1291	1483	1142	1200	1080	1021	1073	1097	1162	1173	1727	1805	25912	
FRANCE	3969	547	693	649	790	681	730	701	688	697	735	783	714	958	985	14320	
UNITED KINGDOM	3760	547	647	608	775	652	629	560	506	558	630	666	638	964	1014	13154	
SOUTH KOREA	25	8	29	39	68	97	217	293	405	550	613	805	1000	1833	2035	8017	
CANADA	1596	220	282	263	357	305	337	301	318	331	369	479	466	717	801	7142	
NETHERLANDS	1829	255	350	280	385	352	322	272	237	274	312	329	287	474	425	6383	
SWITZERLAND	1756	188	257	202	210	183	197	177	181	199	178	196	181	227	216	4548	
TAIWAN	83	31	58	80	106	158	149	196	225	246	332	411	503	885	967	4430	
ITALY	867	128	191	151	195	178	149	142	168	163	135	229	222	328	275	3521	
SWEDEN	873	128	133	107	148	105	91	99	104	150	165	237	215	301	425	3281	
ISRAEL	146	45	50	42	77	76	65	70	86	113	142	173	200	301	290	1876	
FINLAND	117	26	43	25	35	33	57	59	68	101	106	123	118	225	260	1396	
AUSTRALIA	280	28	49	45	69	57	68	55	52	53	62	53	57	102	87	1117	
BELGIUM	233	33	39	40	50	39	50	40	56	60	70	102	79	117	105	1113	
AUSTRIA	252	39	41	41	57	41	47	41	38	41	43	37	45	48	65	876	
U.S.S.R.	591	11	14	10	35	25	34	6	7	7	1	3	1	1	1	746	
DENMARK	166	26	21	21	35	20	20	18	13	15	17	20	21	27	60	500	
CHINA, HONG KONG S.A.R.	68	10	15	16	23	21	21	26	22	19	26	26	31	59	61	444	
NORWAY	86	10	32	27	19	12	17	16	24	23	23	19	12	26	34	380	
SINGAPORE	9	1			6	5	12	17	19	20	43	40	52	60	284		
IRELAND	23	5	13	13	16	17	15	17	15	13	21	27	31	27	25	278	
SPAIN	34	6	7	18	14	7	12	13	17	15	8	20	27	35	18	251	
SOUTH AFRICA	70	10	10	7	12	12	14	7	7	10	11	22	17	19	11	239	
RUSSIAN FEDERATION										1	10	27	18	26	49	63	194
HUNGARY	73	11	16	17	7	14	5	7	4	4	3	2	4	10	8	185	
NEW ZEALAND	34	6	7	5	14	3	7	7	3	6	8	9	14	30	16	169	
CHINA P.REP.	2	2	5	12	7	13	9	7	7	8	15	9	14	18	16	144	
BRAZIL	15	3	4	5	5	3	6	4	6	5	3	7	5	11	10	92	
MEXICO	30	4	7	3	2	1	3	3	5	3	2	2	4	4	8	81	
BULGARIA	31	3	9	9	6	6	2	1	2							69	
INDIA	4	1			1	3	2	4	2	5	7	9	10	10	9	67	
CZECHOSLOVAKIA	42	1	5	1	3	2			1	3		1	4	2	1	66	
ARGENTINA	23	3	2	3	2	2	4	1	2	6	4	1	2	4	2	61	
YUGOSLAVIA	13		6	5	4	8	8	4	2	1	1		1			53	
POLAND	29	3	2	3	1	2	1	1			1	2		2	1	48	
Others (67)	94	17	15	12	14	13	17	23	17	28	28	39	34	48	61	460	

Ownership:

U.S. Corporations	54480	7291	9104	8080	10235	9418	10225	10162	10882	12467	13502	16075	16082	24048	25004	237055
U.S. Government	3461	391	332	241	266	360	421	372	371	469	371	343	291	314	282	8285
U.S. Individuals	9374	1010	1217	1214	1628	1465	1580	1487	1373	1493	1681	1875	1853	2417	2405	32072
Foreign Corporations	40711	6591	9210	8746	11399	10357	11329	11730	11975	13232	13616	15340	14981	22314	22766	224297
Foreign Government	704	136	130	136	131	135	137	128	111	86	80	73	71	68	38	2164
Foreign Individuals	3954	451	563	556	711	645	611	604	550	540	605	660	671	1007	912	13040

ELECTRICAL CLASSES (12-31-99)

----- Technology Assessment and Forecast Report -----

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Part A2
Patent Grants as Distributed By Year of Patent Application

---- Patents Granted By Date Of Patent Application (Granted: Jan 01, 1977 - Dec 31, 1999) ----

	NUMBER OF PATENTED APPLICATIONS															
	Pre 1986	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total

Total	149717	17731	19632	22839	25152	26082	27407	28549	29763	36597	43115	45307	36554	8111	357	516913
U.S. Origin	81814	8301	9199	10484	11843	12352	12798	14020	14893	18147	22443	23306	18380	4041	184	262205
Foreign Origin	67903	9430	10433	12355	13309	13730	14609	14529	14870	18450	20672	22001	18174	4070	173	254708
JAPAN	34677	5618	6313	8050	8651	9170	9775	9650	9661	12046	13060	13002	10731	2309	98	152811
GERMANY	10606	1226	1221	1198	1199	1176	1143	1102	1030	1242	1470	1569	1377	341	12	25912
FRANCE	5239	569	646	700	737	791	735	727	774	817	876	884	675	146	4	14320
UNITED KINGDOM	5051	567	639	627	676	581	609	550	630	736	839	862	676	107	4	13154
SOUTH KOREA	58	36	63	87	240	287	484	508	563	829	1138	1870	1481	367	6	8017
CANADA	2081	235	294	307	370	327	322	338	426	503	621	672	531	110	5	7142
NETHERLANDS	2426	281	292	349	338	292	263	290	304	370	379	436	314	47	2	6383
SWITZERLAND	2154	209	176	184	210	200	190	204	185	212	215	193	167	48	1	4548
TAIWAN	154	57	104	101	167	165	227	265	288	384	578	772	812	327	29	4430
ITALY	1165	164	146	177	166	171	182	152	167	217	266	267	242	37	2	3521
SWEDEN	1129	108	112	104	105	106	130	139	179	243	286	289	293	57	1	3281
ISRAEL	243	42	58	63	78	88	99	116	149	208	232	262	206	31	1	1876
FINLAND	184	19	40	27	49	57	78	102	109	118	158	272	164	17	2	1396
AUSTRALIA	366	40	50	73	53	62	63	60	66	53	74	96	49	12		1117
BELGIUM	307	43	32	48	39	45	60	61	69	91	97	122	74	25		1113
AUSTRIA	325	41	52	44	43	45	39	49	44	43	44	53	43	9	2	876
U.S.S.R.	610	17	24	31	24	17	11	4	4	2	1			1		746
DENMARK	210	16	29	35	14	20	19	12	21	20	24	35	39	6		500
CHINA, HONG KONG S.A.R.	87	14	22	16	36	12	31	25	22	33	39	45	50	11	1	444
NORWAY	126	28	20	12	13	17	29	25	22	15	20	20	26	7		380
SINGAPORE	9	1	2	6	5	7	12	24	26	46	45	48	47	6		284
IRELAND	41	14	12	15	16	15	17	17	15	38	27	25	22	4		278
SPAIN	49	11	12	11	9	13	12	22	14	28	24	29	15	2		251
SOUTH AFRICA	90	7	10	16	12	6	7	10	16	19	20	15	11			239
RUSSIAN FEDERATION							1	6	21	29	32	44	49	12		194
HUNGARY	102	11	8	13	9	6	6	3	4	2	8	7	6			185
NEW ZEALAND	48	6	9	7	5	6	8	6	3	16	17	28	7	3		169
CHINA P.REP.	6	14	7	10	8	10	9	8	11	15	13	13	14	6		144
BRAZIL	20	3	9	3	5	4	7	6	2	12	4	9	5	3		92
MEXICO	37	6	2	2	2	4	6	2	2	3	4	6	5			81
BULGARIA	44	7	5	4	6	2	1									69
INDIA	6		1	2	2	4	4	3	8	8	13	8	7	1		67
CZECHOSLOVAKIA	46	3	1	4			1	2	1	2	2	2	2			66
ARGENTINA	29	1	2	3	2	2	3	4	5	3	2	4		1		61
YUGOSLAVIA	15	6	9	6	7	5	1	2	1		1					53
POLAND	35	2		3		1	1			1	2		2	1		48
Others (67)	128	8	11	17	13	18	23	34	27	45	43	40	32	18	3	460

Ownership:

U.S. Corporations	71152	7582	8315	9499	10722	11049	11599	12718	13632	16713	21060	21992	17212	3646	164	237055
U.S. Government	4413	228	192	266	339	365	413	402	424	353	352	258	227	53		8285
U.S. Individuals	11589	1113	1342	1462	1591	1610	1502	1616	1638	2072	2209	2105	1728	473	22	32072
Foreign Corporations	56610	8191	9037	10905	11702	12291	13185	13150	13391	16677	18655	20036	16597	3719	151	224297
Foreign Government	1002	102	123	112	149	135	123	79	82	77	67	72	33	8		2164
Foreign Individuals	4951	515	623	595	649	632	585	584	596	705	772	844	757	212	20	13040

---- Patents Granted By Date Of Patent Application (Granted: Jan 01, 1977 - Dec 31, 1999) ----

- - - - - PERCENT OF PATENTED APPLICATIONS - - - - -

	Pre 1986	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
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Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
U.S. Origin	55	47	47	46	47	47	47	49	50	50	52	51	50	50	52	51
Foreign Origin	45	53	53	54	53	53	53	51	50	50	48	49	50	50	48	49
JAPAN	23	32	32	35	34	35	36	34	32	33	30	29	29	28	27	30
GERMANY	7	7	6	5	5	5	4	4	3	3	3	3	4	4	3	5
FRANCE	3	3	3	3	3	3	3	3	2	2	2	2	2	1	1	3
UNITED KINGDOM	3	3	3	3	3	2	2	2	2	2	2	2	1	1	1	3
SOUTH KOREA					1	1	2	2	2	2	3	4	4	5	2	2
CANADA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
NETHERLANDS	2	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1
SWITZERLAND	1	1	1	1	1	1	1	1	1	1			1		1	1
TAIWAN			1		1	1	1	1	1	1	1	2	2	4	8	1
ITALY	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
SWEDEN	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1
ISRAEL									1	1	1	1	1	1	0	0
FINLAND												1		1	0	0
AUSTRALIA															0	0
BELGIUM															0	0
AUSTRIA															1	0
U.S.S.R.															0	0
DENMARK															0	0
CHINA, HONG KONG S.A.R.															0	0
NORWAY															0	0
SINGAPORE															0	0
IRELAND															0	0
SPAIN															0	0
SOUTH AFRICA															0	0
RUSSIAN FEDERATION															0	0
HUNGARY															0	0
NEW ZEALAND															0	0
CHINA P.REP.															0	0
BRAZIL															0	0
MEXICO															0	0
BULGARIA															0	0
INDIA															0	0
CZECHOSLOVAKIA															0	0
ARGENTINA															0	0
YUGOSLAVIA															0	0
POLAND															0	0
Others (67)															1	0

Ownership:

U.S. Corporations	48	43	42	42	43	42	42	45	46	46	49	49	47	45	46	46
U.S. Government	3	1	1	1	1	1	2	1	1	1	1	1	1	1	1	2
U.S. Individuals	8	6	7	6	6	6	5	6	6	6	5	5	5	6	6	6
Foreign Corporations	38	46	46	48	47	47	48	46	45	46	43	44	45	46	42	43
Foreign Government	1	1	1		1	1										0
Foreign Individuals	3	3	3	3	3	2	2	2	2	2	2	2	2	3	6	3

Part B

Ranked Listing of Organizations with PATENT GRANTS
As Distributed By Year of Patent Grant
and As Distributed By Year of Patent Application

Technology Assessment and Forecast Report

ELECTRICAL CLASSES (12-31-99)

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Organizational Patenting

(Granted: Jan 01, 1977 - Dec 31, 1999)

Ranked List of Organizations with 200 or More Patents

Pre

1986 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 TOTAL

INTERNATIONAL BUSINESS MACHINES CORPORATION

Patents By Year of Grant:	2533	400	418	390	473	456	484	625	823	1004	1112	1546	1405	2227	2199	16095
Patents By Year of Application:	3440	373	404	475	538	706	920	1176	962	1423	1980	1963	1534	194	7	16095

TOSHIBA CORPORATION

Patents By Year of Grant:	1880	469	576	519	692	668	749	731	749	733	742	692	659	894	921	11674
Patents By Year of Application:	2921	487	577	715	741	754	887	670	654	826	781	856	648	148	9	11674

CANON KABUSHIKI KAISHA

Patents By Year of Grant:	1498	300	510	465	590	545	529	697	601	713	709	1000	916	1334	1176	11583
Patents By Year of Application:	2303	467	464	506	619	594	731	758	836	1232	1349	904	740	76	4	11583

HITACHI, LTD

Patents By Year of Grant:	2277	389	541	596	742	620	638	639	618	704	658	725	649	836	773	11405
Patents By Year of Application:	3347	541	635	739	702	714	719	654	635	690	795	660	464	104	6	11405

NEC CORPORATION

Patents By Year of Grant:	817	207	332	318	440	407	389	407	509	754	858	869	871	1360	1480	10018
Patents By Year of Application:	1420	281	326	425	426	384	546	736	660	1123	986	1280	1166	251	8	10018

MOTOROLA, INC.

Patents By Year of Grant:	1409	278	339	256	301	317	501	534	571	660	814	878	842	1171	980	9851
Patents By Year of Application:	1932	295	249	301	473	555	634	670	774	965	1109	1045	709	137	3	9851

MITSUBISHI DENKI KABUSHIKI KAISHA

Patents By Year of Grant:	727	191	328	313	506	560	605	606	607	699	711	738	671	858	793	8913
Patents By Year of Application:	1211	303	404	592	615	645	702	676	649	744	825	750	631	158	8	8913

U.S. PHILIPS CORPORATION

Patents By Year of Grant:	2344	385	506	442	588	479	496	401	357	317	418	396	396	588	575	8688
Patents By Year of Application:	3234	424	445	510	514	425	395	356	371	463	537	543	400	68	3	8688

SONY CORPORATION

Patents By Year of Grant:	1219	190	272	260	275	204	256	354	443	506	582	670	645	1083	1139	8098
Patents By Year of Application:	1696	241	219	256	252	338	456	538	577	688	856	996	860	119	6	8098

FUJITSU LIMITED

Patents By Year of Grant:	625	153	190	194	224	214	284	316	343	469	586	723	757	1018	1009	7105
Patents By Year of Application:	1000	152	188	204	285	343	435	484	521	826	965	921	650	128	3	7105

GENERAL ELECTRIC COMPANY

Patents By Year of Grant:	2650	319	385	313	350	356	337	304	277	312	267	279	234	281	279	6943
Patents By Year of Application:	3319	290	316	324	353	332	285	321	270	294	281	282	214	60	2	6943

Technology Assessment and Forecast Report

ELECTRICAL CLASSES (12-31-99)

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Organizational Patenting

(Granted: Jan 01, 1977 - Dec 31, 1999)

Ranked List of Organizations with 200 or More Patents

	Pre 1986	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	TOTAL
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SIEMENS AKTIENGESELLSCHAFT

Patents By Year of Grant:	2366	261	384	371	410	327	302	260	210	212	248	267	282	397	434	6731
Patents By Year of Application:	2997	359	321	347	284	304	233	230	214	281	314	377	364	102	4	6731

MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.

Patents By Year of Grant:	978	125	192	162	232	200	281	371	437	538	579	573	507	707	739	6621
Patents By Year of Application:	1311	171	178	213	271	388	479	522	549	651	611	651	509	111	6	6621

AT&T CORP.

Patents By Year of Grant:	2255	306	288	282	269	299	351	282	282	444	484	425	44	145	270	6426
Patents By Year of Application:	2896	262	214	230	362	355	297	401	516	363	176	173	170	10	1	6426

TEXAS INSTRUMENTS, INCORPORATED

Patents By Year of Grant:	954	107	199	140	260	188	257	240	225	317	334	425	423	473	446	4988
Patents By Year of Application:	1328	134	170	223	242	255	257	273	365	459	521	362	332	67	0	4988

EASTMAN KODAK COMPANY

Patents By Year of Grant:	499	70	146	207	206	311	396	343	365	356	310	358	358	466	410	4801
Patents By Year of Application:	670	143	184	270	377	383	410	421	283	350	344	482	367	114	3	4801

XEROX CORPORATION

Patents By Year of Grant:	1233	118	117	128	115	110	153	210	285	312	302	402	333	451	376	4645
Patents By Year of Application:	1463	108	110	115	141	228	284	286	359	380	407	362	259	136	7	4645

SHARP KABUSHIKI KAISHA (SHARP CORPORATION)

Patents By Year of Grant:	527	137	203	180	268	261	293	295	277	352	299	287	302	445	390	4516
Patents By Year of Application:	912	167	180	295	305	294	318	330	311	323	359	396	258	66	2	4516

SAMSUNG ELECTRONICS CO., LTD.

Patents By Year of Grant:	1	1	4	4	20	41	111	187	239	326	323	366	424	929	1118	4094
Patents By Year of Application:	6	4	16	32	151	173	290	300	315	355	465	1049	716	217	5	4094

HEWLETT-PACKARD COMPANY

Patents By Year of Grant:	317	43	91	92	154	137	207	208	208	287	291	307	312	521	551	3726
Patents By Year of Application:	447	99	121	149	215	211	251	264	265	312	365	563	406	55	3	3726

RCA CORPORATION

Patents By Year of Grant:	2804	370	398	90	1	0	1	0	0	0	0	0	0	0	0	3664
Patents By Year of Application:	3456	182	25	0	1	0	0	0	0	0	0	0	0	0	0	3664

WESTINGHOUSE ELECTRIC CORP.

Patents By Year of Grant:	1905	161	256	139	170	192	135	133	127	119	53	47	23	26	3	3489
Patents By Year of Application:	2283	148	150	195	160	138	142	95	68	65	22	14	9	0	0	3489

Technology Assessment and Forecast Report

ELECTRICAL CLASSES (12-31-99)

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Organizational Patenting

(Granted: Jan 01, 1977 - Dec 31, 1999)

Ranked List of Organizations with 200 or More Patents

	Pre 1986	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	TOTAL
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FUJI PHOTO FILM CO., LTD.

Patents By Year of Grant:	368	162	190	257	406	294	255	214	179	145	142	146	180	208	216	3362
Patents By Year of Application:	749	242	267	327	277	225	199	176	144	152	197	218	154	34	1	3362

RICOH COMPANY, LTD.

Patents By Year of Grant:	524	113	113	106	176	200	208	243	192	208	189	212	251	297	292	3324
Patents By Year of Application:	751	90	120	211	235	248	215	207	202	236	265	285	190	65	4	3324

UNITED STATES OF AMERICA, NAVY

Patents By Year of Grant:	1317	106	65	50	65	140	173	126	131	160	150	136	116	150	141	3026
Patents By Year of Application:	1699	30	37	76	79	158	144	143	134	131	144	113	113	25	0	3026

INTEL CORPORATION

Patents By Year of Grant:	102	13	12	19	34	34	47	50	98	183	251	393	371	659	657	2923
Patents By Year of Application:	127	16	35	36	41	55	92	178	283	412	550	629	416	52	1	2923

MINOLTA CAMERA CO., LTD.

Patents By Year of Grant:	471	50	64	122	258	285	250	215	180	116	78	115	107	222	234	2767
Patents By Year of Application:	577	83	192	294	304	226	201	137	90	123	117	174	182	63	4	2767

UNISYS CORPORATION

Patents By Year of Grant:	1374	118	110	78	79	68	80	78	46	74	97	121	99	114	83	2619
Patents By Year of Application:	1632	50	81	77	88	58	57	73	103	112	125	101	56	5	1	2619

HUGHES AIRCRAFT COMPANY

Patents By Year of Grant:	527	45	119	148	193	165	227	195	193	234	203	185	76	26	5	2541
Patents By Year of Application:	733	152	144	170	187	204	216	244	203	154	103	29	2	0	0	2541

LUCENT TECHNOLOGIES INC.

Patents By Year of Grant:	0	0	0	0	0	0	0	0	0	0	0	235	595	767	863	2460
Patents By Year of Application:	0	0	0	0	0	1	5	8	49	321	692	682	561	135	6	2460

NIKON CORPORATION

Patents By Year of Grant:	337	44	72	50	47	54	58	80	98	78	165	306	307	362	214	2272
Patents By Year of Application:	426	55	42	43	67	60	104	82	120	267	436	289	240	39	2	2272

OLYMPUS OPTICAL CO., LTD.

Patents By Year of Grant:	701	87	60	76	95	93	80	103	105	148	122	132	110	136	110	2158
Patents By Year of Application:	851	62	63	97	85	107	125	124	162	155	132	100	74	21	0	2158

PIONEER ELECTRONIC CORPORATION

Patents By Year of Grant:	359	76	93	87	153	135	154	210	178	141	127	87	94	120	126	2140
Patents By Year of Application:	550	54	119	164	157	200	168	155	123	105	96	123	103	22	1	2140

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ELECTRICAL CLASSES (12-31-99)

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----- Organizational Patenting

(Granted: Jan 01, 1977 - Dec 31, 1999) ----- Ranked List of Organizations with 200 or More Patents -----

	Pre															
	1986	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	TOTAL

ADVANCED MICRO DEVICES, INC.

Patents By Year of Grant:	46	39	69	74	75	72	72	62	74	67	105	146	203	407	533	2044
Patents By Year of Application:	176	79	44	66	77	91	51	68	110	148	288	376	396	68	6	2044

THOMSON-CSF

Patents By Year of Grant:	860	104	106	100	88	93	109	84	64	62	71	41	41	54	55	1932
Patents By Year of Application:	1101	76	74	84	103	97	73	67	56	57	57	42	33	12	0	1932

DIGITAL EQUIPMENT CORPORATION

Patents By Year of Grant:	90	19	19	33	98	114	122	185	230	245	171	157	129	157	120	1889
Patents By Year of Application:	138	27	109	116	192	178	184	237	182	160	139	129	82	16	0	1889

HONEYWELL INC.

Patents By Year of Grant:	528	91	95	87	125	101	94	87	83	97	111	79	69	80	70	1797
Patents By Year of Application:	718	90	86	106	117	83	87	95	110	81	75	93	52	4	0	1797

ROBERT BOSCH GMBH

Patents By Year of Grant:	571	59	88	68	58	50	71	82	83	94	100	106	69	111	168	1778
Patents By Year of Application:	704	73	57	48	69	87	81	102	102	102	99	103	102	47	2	1778

ROCKWELL INTERNATIONAL CORPORATION

Patents By Year of Grant:	717	87	71	62	65	58	75	52	72	79	66	75	46	68	63	1656
Patents By Year of Application:	872	58	64	56	80	66	66	76	77	68	82	50	37	4	0	1656

UNITED STATES OF AMERICA, ARMY

Patents By Year of Grant:	773	79	68	44	60	44	58	52	49	73	81	68	58	58	46	1611
Patents By Year of Application:	932	36	31	48	58	41	57	63	80	80	78	57	36	14	0	1611

NATIONAL SEMICONDUCTOR CORPORATION

Patents By Year of Grant:	256	29	36	25	47	47	74	77	86	108	141	171	158	143	157	1555
Patents By Year of Application:	315	22	36	47	72	81	89	104	125	170	223	128	106	36	1	1555

SUN MICROSYSTEMS, INC.

Patents By Year of Grant:	3	0	2	3	7	13	21	49	59	65	59	108	147	415	539	1490
Patents By Year of Application:	7	3	3	14	36	51	50	68	58	109	279	471	305	35	1	1490

ASAHI KOGAKU KOGYO KABUSHIKI KAISHA

Patents By Year of Grant:	282	34	16	15	33	58	101	115	122	132	89	87	89	157	152	1482
Patents By Year of Application:	329	13	22	52	94	127	131	116	97	102	107	119	135	37	1	1482

NORTHERN TELECOM LIMITED

Patents By Year of Grant:	327	54	70	51	59	53	58	51	52	63	69	90	56	184	213	1450
Patents By Year of Application:	447	52	41	47	72	59	49	44	91	81	96	218	143	10	0	1450

Technology Assessment and Forecast Report

ELECTRICAL CLASSES (12-31-99)

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Organizational Patenting

(Granted: Jan 01, 1977 - Dec 31, 1999)

Ranked List of Organizations with 200 or More Patents

Pre

1986 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 TOTAL

VICTOR COMPANY OF JAPAN, LIMITED

Patents By Year of Grant:	491	118	118	64	55	49	76	72	68	52	42	47	53	70	74	1449
Patents By Year of Application:	715	72	46	48	70	84	64	59	42	53	60	77	50	9	0	1449

MICRON TECHNOLOGY, INC.

Patents By Year of Grant:	1	0	0	0	3	19	21	45	66	55	24	81	157	334	523	1329
Patents By Year of Application:	1	0	0	13	17	33	66	72	34	45	190	283	410	146	19	1329

TELEFONAKTIEBOLAGET LM ERICSSON

Patents By Year of Grant:	141	33	31	27	25	23	18	34	44	61	76	140	104	189	338	1284
Patents By Year of Application:	201	30	17	23	23	45	50	55	88	121	198	194	208	31	0	1284

UNITED STATES OF AMERICA, AIR FORCE

Patents By Year of Grant:	506	100	91	50	38	45	61	53	65	64	38	49	45	36	36	1277
Patents By Year of Application:	695	64	31	35	54	56	60	63	55	44	50	36	30	4	0	1277

SANYO ELECTRIC CO., LTD.

Patents By Year of Grant:	166	44	58	43	58	70	85	70	65	73	61	81	92	163	147	1276
Patents By Year of Application:	270	35	50	71	86	80	63	52	77	106	103	151	106	25	1	1276

NCR CORPORATION

Patents By Year of Grant:	294	33	67	51	72	52	58	59	77	71	40	30	62	129	154	1249
Patents By Year of Application:	400	45	52	63	75	70	85	69	44	26	90	123	100	7	0	1249

TEKTRONIX INC.

Patents By Year of Grant:	268	75	124	153	126	73	66	50	50	31	48	42	35	41	54	1236
Patents By Year of Application:	453	143	105	99	75	54	46	48	36	43	50	32	45	7	0	1236

FUJI XEROX CO., LTD.

Patents By Year of Grant:	170	34	19	15	17	21	36	75	97	99	90	116	93	192	150	1224
Patents By Year of Application:	226	13	13	24	31	101	85	102	88	92	150	171	104	23	1	1224

UNITED STATES OF AMERICA, DEPARTMENT OF ENERGY

Patents By Year of Grant:	477	77	62	61	60	66	65	81	56	83	40	22	17	17	15	1199
Patents By Year of Application:	620	70	51	52	68	67	77	57	62	31	17	14	8	5	0	1199

HARRIS CORP.

Patents By Year of Grant:	275	39	70	43	57	53	46	45	46	56	56	77	84	100	102	1149
Patents By Year of Application:	392	44	39	50	48	42	62	66	42	93	86	100	67	18	0	1149

MURATA MANUFACTURING CO., LTD.

Patents By Year of Grant:	138	33	40	44	42	48	53	57	42	54	72	85	93	146	202	1149
Patents By Year of Application:	197	40	39	54	50	56	39	61	71	92	95	161	158	36	0	1149

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ELECTRICAL CLASSES (12-31-99)

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---- Organizational Patenting (Granted: Jan 01, 1977 - Dec 31, 1999) ---- Ranked List of Organizations with 200 or More Patents ----

	Pre 1986	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	TOTAL
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ALPS ELECTRIC CO., LTD.

Patents By Year of Grant:	216	77	116	138	98	61	60	45	29	26	27	22	47	62	108	1132
Patents By Year of Application:	373	128	106	74	63	43	42	29	23	32	46	67	93	12	1	1132

EATON CORPORATION

Patents By Year of Grant:	253	60	53	32	48	58	35	36	41	63	76	89	72	99	117	1132
Patents By Year of Application:	351	41	45	48	40	45	46	44	84	93	74	86	86	48	1	1132

RAYTHEON COMPANY

Patents By Year of Grant:	405	32	63	32	46	58	55	64	56	40	33	7	15	72	149	1127
Patents By Year of Application:	521	34	39	51	63	39	68	27	41	17	22	81	107	16	1	1127

FANUC LTD.

Patents By Year of Grant:	83	58	89	59	110	105	112	105	84	64	62	52	37	56	39	1115
Patents By Year of Application:	224	64	77	102	143	108	85	58	49	70	61	24	44	6	0	1115

GENERAL MOTORS CORPORATION

Patents By Year of Grant:	371	45	68	64	63	57	60	48	64	44	41	57	41	42	42	1107
Patents By Year of Application:	435	82	48	60	65	62	72	56	42	56	55	40	25	8	1	1107

YAMAHA CORPORATION

Patents By Year of Grant:	0	0	0	2	52	78	83	84	122	88	103	110	103	144	137	1106
Patents By Year of Application:	2	6	44	68	104	120	85	96	104	96	120	123	102	35	1	1106

NISSAN MOTOR COMPANY, LIMITED

Patents By Year of Grant:	297	47	61	48	70	99	88	83	54	45	42	29	34	45	50	1092
Patents By Year of Application:	422	50	61	92	91	75	67	49	27	33	47	34	34	10	0	1092

NIPPONDENSO CO., LTD.

Patents By Year of Grant:	207	30	65	48	42	26	32	26	41	54	56	120	131	165	43	1086
Patents By Year of Application:	309	44	32	32	39	21	38	54	66	108	158	163	19	3	0	1086

MICROSOFT CORPORATION

Patents By Year of Grant:	0	0	0	1	2	3	2	7	15	23	46	97	194	330	348	1068
Patents By Year of Application:	1	0	2	4	11	11	7	63	65	146	240	294	208	15	1	1068

APPLE COMPUTER, INC.

Patents By Year of Grant:	13	2	3	6	6	17	17	28	45	50	101	165	196	247	165	1061
Patents By Year of Application:	21	4	12	8	19	32	46	80	129	167	283	172	79	9	0	1061

SEIKO EPSON CORPORATION

Patents By Year of Grant:	0	16	17	15	26	28	45	71	94	88	86	111	133	177	148	1055
Patents By Year of Application:	35	12	23	30	57	72	79	99	98	131	172	132	95	19	1	1055

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ELECTRICAL CLASSES (12-31-99)

---- Organizational Patenting

(Granted: Jan 01, 1977 - Dec 31, 1999)

---- Ranked List of Organizations with 200 or More Patents ----

	Pre 1986	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	TOTAL
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OKI ELECTRIC INDUSTRY CO., LTD.

Patents By Year of Grant:	70	13	32	38	78	58	66	72	81	85	65	71	54	105	165	1053
Patents By Year of Application:	117	26	54	80	64	67	96	68	66	80	87	85	137	26	0	1053

GTE PRODUCTS CORPORATION

Patents By Year of Grant:	592	46	48	53	75	53	64	42	38	22	4	1	0	3	0	1041
Patents By Year of Application:	678	54	61	64	53	44	47	36	4	0	0	0	0	0	0	1041

KONICA CORPORATION

Patents By Year of Grant:	216	29	29	35	62	72	77	78	68	85	57	67	50	55	58	1038
Patents By Year of Application:	267	39	53	50	67	93	77	75	74	53	74	53	40	22	1	1038

CASIO COMPUTER CO. LTD.

Patents By Year of Grant:	158	31	70	63	49	49	81	72	58	54	51	77	47	64	69	993
Patents By Year of Application:	267	54	37	51	92	71	58	62	58	75	63	55	42	7	1	993

ZENITH ELECTRONICS CORPORATION

Patents By Year of Grant:	408	57	78	69	45	41	46	44	39	27	26	30	30	25	21	986
Patents By Year of Application:	538	55	52	42	44	44	45	42	22	26	30	29	17	0	0	986

COMPAQ COMPUTER CORPORATION, INC.

Patents By Year of Grant:	0	1	0	2	9	14	18	52	43	55	76	82	116	236	242	946
Patents By Year of Application:	2	1	7	19	33	40	56	61	65	88	127	252	170	25	0	946

BROTHER KOGYO KABUSHIKI KAISHA

Patents By Year of Grant:	17	6	27	29	64	96	137	95	77	60	36	56	66	79	96	941
Patents By Year of Application:	49	27	56	91	90	143	87	51	46	62	76	84	64	14	1	941

MINNESOTA MINING AND MANUFACTURING COMPANY

Patents By Year of Grant:	249	31	31	32	63	44	42	42	57	78	74	60	44	65	23	935
Patents By Year of Application:	308	30	41	57	38	56	55	65	68	67	76	45	28	1	0	935

HONDA GIKEN KOGYO KABUSHIKI KAISHA (HONDA MOTOR CO., LTD.)

Patents By Year of Grant:	62	25	31	23	51	41	38	43	51	55	62	69	90	113	120	874
Patents By Year of Application:	126	23	34	43	57	36	40	64	70	69	105	75	91	40	1	874

POLAROID CORPORATION

Patents By Year of Grant:	463	33	49	43	51	23	20	19	16	11	17	19	17	31	30	842
Patents By Year of Application:	538	37	42	35	24	18	21	8	14	29	25	22	20	9	0	842

FORD MOTOR COMPANY

Patents By Year of Grant:	139	15	19	15	32	30	40	44	61	72	76	92	78	65	47	825
Patents By Year of Application:	170	16	28	35	32	44	58	77	78	97	87	47	45	11	0	825

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ELECTRICAL CLASSES (12-31-99)

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----- Organizational Patenting

(Granted: Jan 01, 1977 - Dec 31, 1999) ----- Ranked List of Organizations with 200 or More Patents -----

	Pre 1986 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999												TOTAL
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BOEING COMPANY

Patents By Year of Grant:	191	37	39	47	58	78	73	44	35	27	28	35	31	43	32	798
Patents By Year of Application:	298	38	49	62	79	48	41	19	27	29	58	29	16	5	0	798

TRW INC.

Patents By Year of Grant:	199	34	28	28	37	29	19	16	32	54	52	42	41	68	112	791
Patents By Year of Application:	267	24	37	27	24	17	31	58	48	40	50	79	68	20	1	791

PITNEY-BOWES, INC.

Patents By Year of Grant:	236	33	35	24	64	34	41	37	27	36	31	27	42	70	47	784
Patents By Year of Application:	332	31	42	38	32	38	29	31	37	50	55	50	17	2	0	784

LSI LOGIC CORPORATION

Patents By Year of Grant:	1	0	1	4	6	5	9	16	26	19	46	85	116	175	262	771
Patents By Year of Application:	3	1	7	9	6	16	18	37	57	68	156	207	164	22	0	771

MITA INDUSTRIAL COMPANY LTD.

Patents By Year of Grant:	75	28	28	25	28	33	45	44	55	52	54	67	56	125	54	769
Patents By Year of Application:	120	30	33	22	42	54	43	63	59	55	73	79	80	15	1	769

UNITED TECHNOLOGIES CORPORATION

Patents By Year of Grant:	290	51	53	35	44	36	38	53	37	30	41	23	19	6	12	768
Patents By Year of Application:	395	32	40	43	37	36	46	36	33	43	8	11	6	2	0	768

ITT CORPORATION

Patents By Year of Grant:	425	65	42	10	15	30	20	24	24	34	29	22	12	7	5	764
Patents By Year of Application:	548	5	7	21	28	23	22	29	28	20	24	6	2	1	0	764

UNITED STATES OF AMERICA, NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Patents By Year of Grant:	223	18	36	24	35	43	49	43	47	65	43	40	34	35	19	754
Patents By Year of Application:	275	19	32	43	54	35	54	46	71	42	35	27	19	2	0	754

SUMITOMO ELECTRIC INDUSTRIES CO., LTD.

Patents By Year of Grant:	56	11	14	17	37	38	51	68	70	74	90	68	45	47	40	726
Patents By Year of Application:	82	13	34	41	47	53	74	91	70	95	51	41	28	6	0	726

NIPPON TELEGRAPH & TELEPHONE CORP.

Patents By Year of Grant:	212	29	18	31	27	27	25	36	35	28	39	45	50	67	49	718
Patents By Year of Application:	264	27	17	37	16	34	37	35	31	55	60	66	35	4	0	718

SGS-THOMSON MICROELECTRONICS S.R.L.

Patents By Year of Grant:	0	0	0	0	12	40	34	41	41	40	38	96	102	157	91	692
Patents By Year of Application:	0	0	4	27	46	48	43	40	47	93	116	115	105	8	0	692

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ELECTRICAL CLASSES (12-31-99)

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Organizational Patenting

(Granted: Jan 01, 1977 - Dec 31, 1999)

Ranked List of Organizations with 200 or More Patents

Pre

1986 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 TOTAL

FUJI ELECTRIC CO., LTD.

Patents By Year of Grant:	62	17	28	30	38	37	37	39	49	54	71	51	45	57	652	
Patents By Year of Application:	101	25	37	41	28	36	54	46	55	69	65	37	47	11	0	652

TOYOTA JIDOSHA K.K.

Patents By Year of Grant:	107	14	37	44	58	20	15	25	30	16	24	41	38	77	105	651
Patents By Year of Application:	170	55	30	20	20	30	22	18	26	42	46	77	75	19	1	651

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Patents By Year of Grant:	120	7	10	11	34	38	36	54	42	41	47	50	44	60	53	647
Patents By Year of Application:	141	18	21	35	55	46	48	35	46	57	55	47	35	8	0	647

GOLDSTAR COMPANY, LTD.

Patents By Year of Grant:	0	1	11	14	21	22	27	47	64	102	115	118	59	33	10	644
Patents By Year of Application:	8	19	22	22	19	46	87	93	110	139	42	28	9	0	0	644

ALCATEL N. V.

Patents By Year of Grant:	0	0	7	20	36	30	27	47	54	83	65	84	62	89	37	641
Patents By Year of Application:	14	19	24	22	31	57	60	81	57	86	93	81	14	2	0	641

ALLIED-SIGNAL INC.

Patents By Year of Grant:	102	43	71	32	45	42	34	45	37	59	41	29	13	22	22	637
Patents By Year of Application:	223	27	34	33	44	39	49	45	52	31	16	16	22	6	0	637

VLSI TECHNOLOGY, INC.

Patents By Year of Grant:	0	2	0	1	6	6	22	38	50	59	69	83	73	115	106	630
Patents By Year of Application:	4	0	4	6	22	52	58	61	52	77	94	113	76	11	0	630

COMMISSARIAT A L'ENERGIE ATOMIQUE

Patents By Year of Grant:	171	27	41	46	29	29	24	37	22	30	25	28	39	41	31	620
Patents By Year of Application:	243	25	35	32	31	28	32	26	20	37	39	42	24	6	0	620

ROHM COMPANY LIMITED

Patents By Year of Grant:	1	2	0	0	0	4	13	8	39	127	119	68	74	86	77	618
Patents By Year of Application:	3	0	0	0	14	9	24	140	95	96	80	79	60	17	1	618

SEAGATE TECHNOLOGY, INCORPORATED

Patents By Year of Grant:	2	5	4	6	14	18	29	38	54	44	32	48	76	117	127	614
Patents By Year of Application:	11	4	11	18	27	57	35	37	41	63	91	91	109	19	0	614

UNIVERSITY OF CALIFORNIA, THE REGENTS OF

Patents By Year of Grant:	36	14	17	18	24	18	21	20	32	52	56	86	54	93	73	614
Patents By Year of Application:	65	21	15	21	28	26	33	39	55	79	103	82	40	6	1	614

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ELECTRICAL CLASSES (12-31-99)

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Organizational Patenting

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Ranked List of Organizations with 200 or More Patents

	Pre 1986	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	TOTAL
DAEWOO ELECTRONICS COMPANY, LTD.																
Patents By Year of Grant:	1	0	0	0	0	1	0	2	0	12	41	89	126	173	164	609
Patents By Year of Application:	1	0	0	0	2	1	0	5	36	108	149	153	130	24	0	609
NORTH AMERICAN PHILIPS CORPORATION																
Patents By Year of Grant:	86	23	34	32	62	75	74	77	47	46	28	16	5	1	3	609
Patents By Year of Application:	142	35	43	74	82	67	56	55	31	12	12	0	0	0	0	609
CITIZEN WATCH CO., LTD.																
Patents By Year of Grant:	344	20	39	21	11	11	11	10	7	9	7	18	19	24	42	593
Patents By Year of Application:	398	22	8	11	15	13	7	6	10	18	22	20	33	10	0	593
NIPPON GAKKI SEIZO KABUSHIKI KAISHA																
Patents By Year of Grant:	442	29	50	48	10	6	1	1	0	0	0	0	0	0	0	587
Patents By Year of Application:	520	43	17	3	3	0	1	0	0	0	0	0	0	0	0	587
SQUARE D COMPANY																
Patents By Year of Grant:	124	14	17	24	24	42	36	47	34	29	42	30	31	42	43	579
Patents By Year of Application:	158	21	22	33	49	45	34	36	31	40	39	34	26	11	0	579
ERICSSON, INC.																
Patents By Year of Grant:	0	0	1	0	0	0	0	0	0	0	4	29	66	199	275	574
Patents By Year of Application:	1	0	0	0	0	0	2	3	9	38	88	267	145	21	0	574
SCHLUMBERGER TECHNOLOGY CORPORATION																
Patents By Year of Grant:	158	18	26	22	43	33	32	21	31	35	34	36	25	25	33	572
Patents By Year of Application:	211	26	24	22	37	31	31	33	33	38	27	24	31	4	0	572
SGS-THOMSON MICROELECTRONICS S.A.																
Patents By Year of Grant:	0	0	0	1	20	34	30	25	27	35	49	56	80	110	105	572
Patents By Year of Application:	1	0	9	41	24	30	32	28	69	62	110	76	79	11	0	572
SUNDSTRAND CORPORATION																
Patents By Year of Grant:	86	38	24	27	41	63	89	28	25	32	21	31	13	28	19	565
Patents By Year of Application:	144	26	33	40	109	53	20	23	38	23	14	24	12	6	0	565
BRITISH TELECOMMUNICATION, PLC																
Patents By Year of Grant:	10	14	17	23	44	48	38	36	21	33	49	41	34	67	76	551
Patents By Year of Application:	55	23	35	35	48	33	27	34	49	60	39	70	36	7	0	551
DAINIPPON SCREEN MFG. CO., LTD.																
Patents By Year of Grant:	108	36	68	28	40	26	39	35	37	25	26	15	13	25	27	548
Patents By Year of Application:	204	39	27	34	42	20	58	22	24	15	21	24	16	2	0	548

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ELECTRICAL CLASSES (12-31-99)

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Organizational Patenting

(Granted: Jan 01, 1977 - Dec 31, 1999)

Ranked List of Organizations with 200 or More Patents

	Pre 1986	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	TOTAL
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BELL COMMUNICATIONS RESEARCH, INC.

Patents By Year of Grant:	0	3	21	31	46	38	56	61	49	62	53	43	28	36	14	541
Patents By Year of Application:	23	24	36	50	53	54	56	56	67	45	35	36	5	1	0	541

HONEYWELL INFORMATION SYSTEMS INC.

Patents By Year of Grant:	459	43	29	7	1	0	1	1	0	0	0	0	0	0	0	541
Patents By Year of Application:	534	4	1	0	2	0	0	0	0	0	0	0	0	0	0	541

THOMSON CONSUMER ELECTRONICS, INC.

Patents By Year of Grant:	0	0	0	0	9	13	26	59	48	60	65	69	60	65	60	534
Patents By Year of Application:	0	0	0	18	13	56	51	65	43	100	77	70	38	3	0	534

INDUSTRIAL TECHNOLOGY RESEARCH INSTITUTE, TAIWAN

Patents By Year of Grant:	0	0	2	2	9	10	16	16	40	43	64	50	55	119	101	527
Patents By Year of Application:	1	1	9	10	14	13	42	52	53	56	79	93	83	18	3	527

AGFA-GEVAERT, AG

Patents By Year of Grant:	324	17	13	13	18	16	12	12	17	14	11	3	11	17	15	513
Patents By Year of Application:	352	10	17	16	16	5	14	25	9	5	14	11	15	3	1	513

ANALOG DEVICES, INC.

Patents By Year of Grant:	39	7	10	9	18	15	23	27	16	33	53	60	68	66	57	501
Patents By Year of Application:	52	11	13	16	25	23	18	29	39	67	90	68	35	15	0	501

SGS-THOMSON MICROELECTRONICS, INC.

Patents By Year of Grant:	0	0	0	3	5	8	18	38	30	81	74	101	67	66	1	492
Patents By Year of Application:	2	0	5	4	20	36	46	64	73	103	80	49	10	0	0	492

HYUNDAI ELECTRONICS INDUSTRIES CO., LTD.

Patents By Year of Grant:	0	0	0	0	0	0	6	8	12	21	24	65	84	120	148	488
Patents By Year of Application:	0	0	0	0	3	10	17	19	23	53	87	129	122	25	0	488

GTE LABORATORIES, INC.

Patents By Year of Grant:	175	24	39	26	25	31	36	28	20	19	7	12	7	8	14	471
Patents By Year of Application:	241	22	22	31	31	37	22	18	14	7	12	6	7	1	0	471

NOKIA MOBILE PHONES LTD.

Patents By Year of Grant:	0	0	0	0	0	0	5	15	26	42	42	40	42	103	148	463
Patents By Year of Application:	0	0	0	0	0	19	25	51	40	38	64	129	90	7	0	463

SEMICONDUCTOR ENERGY LABORATORY CO., LTD.

Patents By Year of Grant:	4	4	9	9	21	25	25	29	28	31	20	51	49	59	92	456
Patents By Year of Application:	20	6	21	28	25	21	35	38	26	57	65	55	51	8	0	456

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ELECTRICAL CLASSES (12-31-99)

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	Pre															
	1986	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	TOTAL

OMRON TETEISI ELECTRONICS CO.

Patents By Year of Grant:	106	41	57	39	60	48	46	25	16	5	2	1	0	0	0	446
Patents By Year of Application:	210	37	51	52	47	25	12	6	5	1	0	0	0	0	0	446

DELCO ELECTRONICS CORPORATION

Patents By Year of Grant:	0	0	0	6	18	26	23	24	18	32	59	59	55	59	63	442
Patents By Year of Application:	0	2	11	16	34	26	26	24	43	80	59	60	47	12	2	442

LITTON SYSTEMS INC.

Patents By Year of Grant:	131	10	23	18	19	12	9	12	14	31	43	45	25	20	29	441
Patents By Year of Application:	163	18	12	20	8	12	15	28	47	45	23	18	27	5	0	441

CIRRUS LOGIC, INC.

Patents By Year of Grant:	0	0	0	0	0	3	1	4	2	13	32	63	84	127	108	437
Patents By Year of Application:	0	0	2	1	2	4	2	14	37	59	135	99	74	8	0	437

BBC BROWN, BOVERI & COMPANY, LIMITED

Patents By Year of Grant:	299	39	47	26	13	4	0	0	0	0	0	0	0	0	0	428
Patents By Year of Application:	374	32	16	5	1	0	0	0	0	0	0	0	0	0	0	428

INTERNATIONAL STANDARD ELECTRIC CORPORATION(ITT CORP. UNIT)

Patents By Year of Grant:	336	63	28	1	0	0	0	0	0	0	0	0	0	0	0	428
Patents By Year of Application:	427	1	0	0	0	0	0	0	0	0	0	0	0	0	0	428

KOKUSAI DENSHIN DENWA KABUSHIKI KAISHA

Patents By Year of Grant:	140	19	20	23	27	23	11	16	12	15	13	21	18	28	40	426
Patents By Year of Application:	182	22	16	24	17	11	13	12	18	19	29	31	29	3	0	426

AMPEX CORP.

Patents By Year of Grant:	200	23	30	35	23	23	20	15	6	3	14	2	6	9	2	411
Patents By Year of Application:	257	33	25	23	20	13	5	13	3	4	5	8	2	0	0	411

DELL USA, L.P.

Patents By Year of Grant:	0	0	0	0	0	0	0	1	6	17	52	79	80	94	80	409
Patents By Year of Application:	0	0	0	0	1	7	14	2	58	65	112	70	76	4	0	409

LG SEMICON CO., LTD.

Patents By Year of Grant:	0	0	0	0	0	0	0	0	0	0	15	59	137	195	406
Patents By Year of Application:	0	0	0	0	0	0	0	0	5	67	128	157	48	1	406

YAZAKI CORP.

Patents By Year of Grant:	2	1	3	10	26	21	10	24	25	27	28	41	42	74	70	404
Patents By Year of Application:	3	8	16	18	25	20	34	18	35	45	32	74	61	15	0	404

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Ranked List of Organizations with 200 or More Patents ----

	Pre															
	1986	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	TOTAL

ALLEN-BRADLEY COMPANY

Patents By Year of Grant:	123	3	8	11	17	19	18	19	18	26	26	40	45	25	4	402
Patents By Year of Application:	135	10	20	12	22	23	17	28	22	32	45	29	6	1	0	402

DEUTSCHE THOMSON-BRANDT GMBH

Patents By Year of Grant:	1	6	13	15	45	25	34	15	35	36	47	24	23	35	44	398
Patents By Year of Application:	21	16	21	59	29	6	24	42	54	30	32	38	24	2	0	398

MATSUSHITA ELECTRIC WORKS, LTD.

Patents By Year of Grant:	103	23	29	18	26	21	21	16	15	20	21	18	16	20	28	395
Patents By Year of Application:	147	23	18	22	23	23	15	16	21	23	17	18	24	5	0	395

EMERSON ELECTRIC CO.

Patents By Year of Grant:	123	7	18	10	14	33	15	18	14	15	17	18	22	33	36	393
Patents By Year of Application:	137	19	10	26	16	25	14	15	25	20	14	31	34	7	0	393

LG ELECTRONICS INC.

Patents By Year of Grant:	0	0	0	0	0	0	0	0	0	0	0	15	65	146	163	389
Patents By Year of Application:	0	0	0	0	0	0	0	1	1	0	110	131	127	19	0	389

STANFORD UNIVERSITY, LELAND JUNIOR, THE BOARD OF TRUSTEES OF

Patents By Year of Grant:	65	17	20	27	25	14	25	13	22	29	26	23	23	33	27	389
Patents By Year of Application:	112	20	15	23	21	17	16	30	28	26	24	28	23	6	0	389

LICENTIA PATENT-VERWALTUNGS-GMBH

Patents By Year of Grant:	294	10	14	15	11	14	7	3	5	2	2	5	2	1	3	388
Patents By Year of Application:	318	16	10	12	8	6	4	3	1	5	2	3	0	0	0	388

CATERPILLAR INC.

Patents By Year of Grant:	63	5	7	7	5	11	11	11	14	18	35	41	49	35	70	382
Patents By Year of Application:	74	6	8	6	6	21	17	18	39	36	51	54	38	8	0	382

PHILIPS ELECTRONICS NORTH AMERICA CORP.

Patents By Year of Grant:	0	0	0	0	0	0	0	0	0	7	29	65	65	109	107	382
Patents By Year of Application:	0	0	0	0	0	0	2	0	37	75	83	99	67	18	1	382

E. I. DU PONT DE NEMOURS AND COMPANY

Patents By Year of Grant:	90	8	17	11	31	34	42	37	16	28	21	18	5	11	6	375
Patents By Year of Application:	118	11	24	30	41	41	24	25	21	14	14	5	5	2	0	375

TDK CORPORATION

Patents By Year of Grant:	15	8	15	29	37	25	26	21	20	24	24	24	22	33	50	373
Patents By Year of Application:	44	19	25	32	30	27	16	19	25	29	25	22	43	16	1	373

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ELECTRICAL CLASSES (12-31-99)

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	Pre 1986	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	TOTAL
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CHRYSLER MOTORS CORPORATION

Patents By Year of Grant:	32	11	16	17	18	33	20	9	11	19	25	31	24	53	53	372
Patents By Year of Application:	49	22	14	39	14	16	14	16	27	30	32	53	36	10	0	372

GENERAL INSTRUMENT CORPORATION

Patents By Year of Grant:	60	12	15	15	19	13	23	39	27	22	20	21	29	30	25	370
Patents By Year of Application:	89	12	14	14	25	27	34	32	18	27	32	29	16	1	0	370

RAYCHEM CORPORATION

Patents By Year of Grant:	85	14	31	21	33	21	20	23	14	17	15	10	19	31	15	369
Patents By Year of Application:	133	16	21	35	19	21	16	19	16	10	28	20	14	1	0	369

SEIKO INSTRUMENTS INC.

Patents By Year of Grant:	1	0	1	11	16	30	30	41	24	30	36	37	32	39	41	369
Patents By Year of Application:	5	0	23	29	31	38	29	27	48	44	28	34	24	9	0	369

SYMBOL TECHNOLOGIES, INC.

Patents By Year of Grant:	7	2	1	3	8	3	10	23	30	32	39	43	43	60	61	365
Patents By Year of Application:	10	3	3	9	12	17	29	36	30	45	58	56	45	11	1	365

KOITO MANUFACTURING COMPANY LIMITED

Patents By Year of Grant:	5	1	6	11	30	27	26	32	18	19	36	41	33	37	39	361
Patents By Year of Application:	10	9	11	35	25	20	40	15	35	44	41	44	26	6	0	361

MOBIL OIL CORP.

Patents By Year of Grant:	155	38	29	25	36	25	14	11	9	5	1	5	2	3	1	359
Patents By Year of Application:	221	13	28	27	15	17	16	8	3	2	8	1	0	0	0	359

AMP INCORPORATED

Patents By Year of Grant:	157	15	30	30	34	23	36	19	7	0	0	0	0	0	0	351
Patents By Year of Application:	196	33	29	28	26	26	12	1	0	0	0	0	0	0	0	351

HAMAMATSU PHOTONICS KABUSHIKI KAISHA

Patents By Year of Grant:	2	2	12	11	29	40	34	23	18	18	19	43	37	26	37	351
Patents By Year of Application:	13	18	14	36	31	36	18	23	23	34	39	26	39	1	0	351

XILINX, INC.

Patents By Year of Grant:	0	0	4	4	7	1	2	4	2	22	20	55	60	76	92	349
Patents By Year of Application:	5	3	5	3	4	2	7	10	21	37	82	71	73	25	1	349

QUALCOMM, INC.

Patents By Year of Grant:	0	0	0	0	1	7	4	9	8	8	21	48	45	82	105	338
Patents By Year of Application:	0	1	1	5	5	8	9	8	22	53	70	99	55	2	0	338

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(Granted: Jan 01, 1977 - Dec 31, 1999)

Ranked List of Organizations with 200 or More Patents

	Pre 1986	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	TOTAL
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UNITED MICROELECTRONICS CORPORATION

Patents By Year of Grant:	0	0	0	0	0	1	0	3	2	7	37	56	74	82	76	338
Patents By Year of Application:	0	0	0	0	1	2	2	3	16	60	87	89	51	26	1	338

CLARION CO., LTD.

Patents By Year of Grant:	115	24	21	18	29	19	22	30	19	17	5	10	4	3	1	337
Patents By Year of Application:	156	18	25	22	18	31	22	19	9	8	5	2	2	0	0	337

NORTHROP GRUMMAN CORPORATION

Patents By Year of Grant:	0	0	0	0	0	0	0	0	0	7	23	64	50	109	80	333
Patents By Year of Application:	4	0	0	2	1	3	1	5	19	43	88	73	79	15	0	333

TEAC CORPORATION

Patents By Year of Grant:	7	8	26	17	26	19	19	28	35	44	29	24	17	11	23	333
Patents By Year of Application:	37	18	25	25	17	32	38	28	26	32	24	12	19	0	0	333

AISIN SEIKI KABUSHIKI KAISHA

Patents By Year of Grant:	50	13	16	24	32	36	36	20	10	14	10	14	10	9	29	323
Patents By Year of Application:	80	20	28	38	30	32	14	7	8	13	15	13	18	7	0	323

NOKIA TELECOMMUNICATIONS OY

Patents By Year of Grant:	0	0	0	0	0	0	0	0	0	5	23	40	47	91	116	322
Patents By Year of Application:	0	0	0	0	0	0	0	1	25	35	62	133	64	1	1	322

CALIFORNIA INSTITUTE OF TECHNOLOGY

Patents By Year of Grant:	41	7	10	9	29	13	19	17	15	23	24	10	18	35	45	315
Patents By Year of Application:	63	6	22	26	8	23	10	26	28	12	22	36	27	6	0	315

GRUMMAN AEROSPACE CORPORATION

Patents By Year of Grant:	58	9	15	25	24	33	38	40	21	14	20	9	6	2	0	314
Patents By Year of Application:	83	25	19	40	27	38	27	16	15	22	1	1	0	0	0	314

LUCAS INDUSTRIES PUBLIC LTD. COMPANY

Patents By Year of Grant:	180	12	13	5	13	4	17	9	4	6	9	6	10	12	10	310
Patents By Year of Application:	200	13	9	7	10	10	9	6	6	13	7	6	12	2	0	310

CYPRESS SEMICONDUCTOR CORP.

Patents By Year of Grant:	0	0	2	3	5	7	3	3	3	5	16	16	45	94	106	308
Patents By Year of Application:	2	1	3	6	8	1	4	6	11	24	62	88	77	14	1	308

PICKER INTERNATIONAL, INC.

Patents By Year of Grant:	2	1	21	26	29	28	24	17	18	32	17	28	27	19	19	308
Patents By Year of Application:	30	18	20	34	31	17	16	23	26	27	24	20	18	4	0	308

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	Pre 1986 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999												TOTAL
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SINGER COMPANY

Patents By Year of Grant:	269	10	14	13	1	0	0	0	0	0	0	0	0	0	0	307
Patents By Year of Application:	296	6	5	0	0	0	0	0	0	0	0	0	0	0	0	307

ELECTRIC POWER RESEARCH INSTITUTE, INC.

Patents By Year of Grant:	148	3	3	8	13	6	7	9	12	24	20	14	17	12	9	305
Patents By Year of Application:	158	2	9	10	11	4	18	20	22	18	15	10	6	2	0	305

SCIENTIFIC-ATLANTA, INC.

Patents By Year of Grant:	14	3	10	7	15	13	20	11	39	35	32	25	17	28	28	297
Patents By Year of Application:	30	12	5	21	19	22	28	35	30	25	26	25	19	0	0	297

HUGHES ELECTRONIC DEVICES CORPORATION

Patents By Year of Grant:	1	0	0	0	0	0	0	0	0	0	29	165	97	2	294	
Patents By Year of Application:	1	0	0	1	2	0	0	2	6	45	112	121	4	0	0	294

NATIONAL RESEARCH DEVELOPMENT CORPORATION

Patents By Year of Grant:	168	21	21	15	22	19	11	12	1	1	0	0	0	0	0	291
Patents By Year of Application:	211	20	17	16	11	10	5	0	0	1	0	0	0	0	0	291

GOULD INC.

Patents By Year of Grant:	229	8	12	13	6	6	4	5	4	3	0	0	0	0	0	290
Patents By Year of Application:	254	10	2	6	4	4	5	2	3	0	0	0	0	0	0	290

ASEA AKTIEBOLAG

Patents By Year of Grant:	226	24	18	7	13	1	0	0	0	0	0	0	0	0	0	289
Patents By Year of Application:	264	12	12	1	0	0	0	0	0	0	0	0	0	0	0	289

FUJI PHOTO OPTICAL CO. LTD.

Patents By Year of Grant:	75	8	11	5	2	1	3	3	13	19	14	27	34	48	26	289
Patents By Year of Application:	93	5	2	2	0	4	5	19	19	26	30	35	46	3	0	289

DAIMLER-BENZ AKTIENGESELLSCHAFT

Patents By Year of Grant:	41	5	5	13	15	10	15	14	14	16	20	20	30	40	30	288
Patents By Year of Application:	52	12	7	16	15	9	21	15	17	30	32	34	27	1	0	288

AGFA-GEVAERT N.V.

Patents By Year of Grant:	27	8	5	7	3	3	12	12	12	21	22	36	25	54	35	282
Patents By Year of Application:	42	5	3	4	4	15	13	16	23	32	37	46	29	13	0	282

NIPPON STEEL CORP.

Patents By Year of Grant:	30	7	7	5	3	4	8	18	18	31	33	28	28	38	19	277
Patents By Year of Application:	44	5	2	3	5	19	26	27	23	34	36	33	19	1	0	277

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	Pre															
	1986	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	TOTAL

MCDONNELL DOUGLAS CORP.

Patents By Year of Grant:	72	10	10	9	6	13	17	4	16	6	13	18	15	38	29	276
Patents By Year of Application:	94	7	6	16	10	14	10	10	6	18	17	35	23	10	0	276

TANDEM COMPUTERS INCORPORATED

Patents By Year of Grant:	5	7	15	15	26	12	13	5	12	22	18	22	21	46	35	274
Patents By Year of Application:	31	15	26	8	18	7	11	21	16	19	55	23	23	1	0	274

ELECTRONICS AND TELECOMMUNICATIONS RESEARCH INSTITUTE

Patents By Year of Grant:	0	0	0	0	0	0	5	2	6	5	11	20	38	89	96	272
Patents By Year of Application:	0	0	0	0	4	3	5	5	5	41	36	91	76	6	0	272

MCI COMMUNICATIONS CORP.

Patents By Year of Grant:	0	0	0	0	0	0	0	1	3	1	4	10	32	116	105	272
Patents By Year of Application:	0	0	0	0	0	2	2	3	4	5	82	123	48	3	0	272

DATA GENERAL CORP.

Patents By Year of Grant:	138	19	23	13	10	13	8	4	2	8	4	2	6	6	13	269
Patents By Year of Application:	199	3	7	8	11	3	1	7	4	2	6	13	5	0	0	269

GENERAL SIGNAL CORPORATION

Patents By Year of Grant:	116	17	10	12	17	17	20	6	5	5	11	3	5	19	6	269
Patents By Year of Application:	140	17	11	16	21	11	7	5	4	6	9	16	4	2	0	269

PATENT-TREUHAND-GESELLSCHAFT FUR ELEKTRISCHE GLUHLAMPEN MBH

Patents By Year of Grant:	51	16	10	18	10	8	11	11	10	11	16	18	22	32	25	269
Patents By Year of Application:	75	9	19	6	11	7	22	9	13	12	30	27	22	7	0	269

STORAGE TECHNOLOGY CORPORATION

Patents By Year of Grant:	51	5	6	3	9	10	13	13	20	30	31	26	14	13	25	269
Patents By Year of Application:	63	0	7	11	9	23	30	24	29	28	9	13	21	2	0	269

SECRETARY OF STATE FOR DEFENCE IN HER BRITANNIC MAJESTY'S

Patents By Year of Grant:	84	17	11	6	12	8	18	7	15	13	17	16	11	18	14	267
Patents By Year of Application:	127	5	6	9	11	14	12	12	18	11	15	15	8	4	0	267

COOPER INDUSTRIES INC.

Patents By Year of Grant:	27	15	15	17	21	29	16	14	17	13	13	19	17	22	9	264
Patents By Year of Application:	55	12	22	20	26	15	15	18	21	12	18	20	8	2	0	264

ADVANTEST CORP.

Patents By Year of Grant:	0	2	2	5	7	7	4	11	16	10	13	16	34	69	66	262
Patents By Year of Application:	4	4	3	11	4	10	19	7	13	18	36	62	57	13	1	262

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---- Organizational Patenting (Granted: Jan 01, 1977 - Dec 31, 1999) ---- Ranked List of Organizations with 200 or More Patents ----

	Pre 1986	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	TOTAL
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NGK INSULATORS LTD.

Patents By Year of Grant:	25	2	10	12	18	18	14	21	21	21	16	19	22	21	21	261
Patents By Year of Application:	39	3	19	13	22	19	24	17	17	25	28	20	14	1	0	261

TRIMBLE NAVIGATION, LTD.

Patents By Year of Grant:	0	0	0	1	1	1	0	4	7	14	22	33	44	61	70	258
Patents By Year of Application:	1	0	0	1	2	0	6	15	28	41	41	62	52	8	1	258

BENDIX CORPORATION(NOW ALLIED-SIGNAL INC.)

Patents By Year of Grant:	257	0	0	0	0	0	0	0	0	0	0	0	0	0	0	257
Patents By Year of Application:	257	0	0	0	0	0	0	0	0	0	0	0	0	0	0	257

KABUSHIKI KAISHA DAINI SEIKOSHA

Patents By Year of Grant:	247	2	6	2	0	0	0	0	0	0	0	0	0	0	0	257
Patents By Year of Application:	255	2	0	0	0	0	0	0	0	0	0	0	0	0	0	257

SILICON GRAPHICS, INC.

Patents By Year of Grant:	0	0	0	3	0	1	3	2	14	12	11	33	39	82	54	254
Patents By Year of Application:	1	2	1	2	5	2	11	14	30	15	66	69	31	5	0	254

SEIKOSHA CO., LTD.

Patents By Year of Grant:	43	1	19	15	26	25	32	33	18	17	15	7	1	1	0	253
Patents By Year of Application:	52	23	20	26	35	32	22	20	15	3	5	0	0	0	0	253

ITT INDUSTRIES, INC.

Patents By Year of Grant:	170	35	18	5	2	0	0	0	0	0	0	1	1	14	2	248
Patents By Year of Application:	224	3	1	2	0	0	0	0	0	0	1	15	2	0	0	248

MATSUSHITA ELECTRONICS CORPORATION

Patents By Year of Grant:	46	6	6	6	10	6	3	16	11	5	17	14	15	39	48	248
Patents By Year of Application:	58	6	7	9	4	14	8	9	14	16	18	40	34	11	0	248

FRANCE TELECOM

Patents By Year of Grant:	0	0	0	0	0	0	0	2	13	38	29	38	28	56	43	247
Patents By Year of Application:	0	0	0	0	0	0	17	28	39	35	43	50	32	3	0	247

ALTERA CORPORATION

Patents By Year of Grant:	0	2	2	1	3	6	2	9	14	17	12	37	28	48	65	246
Patents By Year of Application:	4	1	2	7	2	5	11	14	24	23	46	50	49	8	0	246

DALLAS SEMICONDUCTOR CORPORATION

Patents By Year of Grant:	0	0	4	4	15	25	24	21	24	14	7	29	24	29	26	246
Patents By Year of Application:	3	2	7	36	27	33	17	11	12	23	28	25	16	6	0	246

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	Pre 1986	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	TOTAL
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WESTERN ATLAS INTERNATIONAL, INC.

Patents By Year of Grant:	0	0	5	15	22	15	6	11	11	13	20	33	27	37	28	243
Patents By Year of Application:	12	16	12	14	7	7	11	17	17	17	39	35	28	11	0	243

RCA LICENSING CORPORATION

Patents By Year of Grant:	0	0	0	70	63	53	46	3	3	0	0	1	0	0	0	239
Patents By Year of Application:	12	26	67	47	58	25	2	1	0	0	1	0	0	0	0	239

GTE AUTOMATIC ELECTRIC LABORATORIES INCORPORATED

Patents By Year of Grant:	235	0	0	0	0	0	0	0	0	0	0	0	0	0	0	235
Patents By Year of Application:	235	0	0	0	0	0	0	0	0	0	0	0	0	0	0	235

SUWA SEIKOSHA CO., LTD.

Patents By Year of Grant:	226	7	0	0	0	0	0	0	0	0	0	0	0	0	0	233
Patents By Year of Application:	233	0	0	0	0	0	0	0	0	0	0	0	0	0	0	233

KABUSHIKI KAISHA KAWAI GAKKI SEISAKUSHO

Patents By Year of Grant:	66	1	7	0	3	7	5	10	23	28	30	12	14	10	14	230
Patents By Year of Application:	73	1	5	3	5	10	16	29	31	18	13	12	8	6	0	230

AMOCO CORPORATION

Patents By Year of Grant:	30	11	7	28	27	30	24	20	21	11	0	6	2	6	3	226
Patents By Year of Application:	60	15	23	23	27	20	27	12	2	4	7	5	1	0	0	226

CSELT - CENTRO STUDI E LABORATORI TELECOMUNICAZIONI S.P.A.

Patents By Year of Grant:	108	12	16	9	14	7	6	9	4	4	4	10	7	10	5	225
Patents By Year of Application:	138	8	9	7	9	8	4	5	2	9	11	10	3	2	0	225

NGK SPARK PLUG CO., LTD.

Patents By Year of Grant:	23	1	19	8	11	14	10	13	8	18	19	20	6	26	29	225
Patents By Year of Application:	43	8	5	12	12	12	13	19	12	24	14	18	28	5	0	225

MAZDA MOTOR CORPORATION

Patents By Year of Grant:	15	2	9	6	8	19	14	16	26	25	23	14	17	16	14	224
Patents By Year of Application:	23	9	6	19	15	20	25	21	29	25	14	8	9	1	0	224

ROBERTSHAW CONTROLS COMPANY

Patents By Year of Grant:	106	7	10	8	7	11	7	12	12	11	12	8	6	3	1	221
Patents By Year of Application:	122	6	4	14	5	11	8	16	11	13	7	4	0	0	0	221

PERKIN-ELMER CORPORATION

Patents By Year of Grant:	104	18	24	15	17	8	7	4	4	5	3	3	3	2	2	219
Patents By Year of Application:	146	12	14	9	6	9	6	5	1	4	4	2	1	0	0	219

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	Pre 1986	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	TOTAL
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NORAND CORPORATION

Patents By Year of Grant:	4	3	3	4	6	9	8	7	16	22	14	33	27	33	29	218
Patents By Year of Application:	8	11	2	8	11	12	7	22	17	34	48	24	14	0	0	218

QUANTUM CORP. (CA)

Patents By Year of Grant:	0	0	0	0	0	0	1	4	14	13	35	38	28	49	34	216
Patents By Year of Application:	0	0	0	1	0	4	14	20	22	40	38	44	25	8	0	216

BULL HN INFORMATION SYSTEMS INC.

Patents By Year of Grant:	0	0	0	0	16	26	15	25	27	26	18	19	18	12	12	214
Patents By Year of Application:	2	7	16	18	37	29	22	20	16	16	12	10	9	0	0	214

NORITSU KOKI CO., LTD.

Patents By Year of Grant:	9	1	3	8	2	1	0	0	0	4	32	20	39	58	36	213
Patents By Year of Application:	11	1	11	1	0	0	0	0	7	48	49	48	33	4	0	213

WANG LABORATORIES, INC.

Patents By Year of Grant:	20	14	16	22	19	23	13	22	14	13	14	11	5	2	3	211
Patents By Year of Application:	66	19	20	18	16	16	15	7	14	12	4	3	1	0	0	211

WHITAKER CORPORATION

Patents By Year of Grant:	0	0	0	0	0	0	0	0	4	42	29	33	27	41	35	211
Patents By Year of Application:	0	0	0	0	0	2	6	24	36	34	32	37	34	6	0	211

EMHART INDUSTRIES, INC.

Patents By Year of Grant:	92	18	22	18	28	18	8	4	0	1	0	0	0	0	0	209
Patents By Year of Application:	123	21	24	19	13	7	2	0	0	0	0	0	0	0	0	209

DISCOVISION ASSOCIATES

Patents By Year of Grant:	59	8	7	9	5	2	3	2	2	3	5	17	23	37	26	208
Patents By Year of Application:	86	3	3	0	1	1	2	1	7	13	67	5	16	3	0	208

NIPPON SOKEN, INC.

Patents By Year of Grant:	119	19	28	9	4	5	5	1	0	3	2	1	3	6	3	208
Patents By Year of Application:	163	13	2	5	3	3	1	3	1	2	5	6	1	0	0	208

FAIRCHILD CAMERA AND INSTRUMENT CORPORATION

Patents By Year of Grant:	167	15	8	8	4	4	0	1	0	0	0	0	0	0	0	207
Patents By Year of Application:	201	0	3	2	0	1	0	0	0	0	0	0	0	0	0	207

AGENCY OF INDUSTRIAL SCIENCE & TECHNOLOGY

Patents By Year of Grant:	48	17	5	12	11	16	14	16	8	7	14	6	9	13	7	203
Patents By Year of Application:	71	7	14	15	18	12	10	4	11	13	7	12	8	1	0	203

----- Technology Assessment and Forecast Report -----

ELECTRICAL CLASSES (12-31-99)

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----- Organizational Patenting

(Granted: Jan 01, 1977 - Dec 31, 1999)

----- Ranked List of Organizations with 200 or More Patents -----

Pre

	1986	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	TOTAL
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BULL S.A.

Patents By Year of Grant:	0	0	1	7	17	10	9	14	25	16	15	25	19	25	20	203
Patents By Year of Application:	4	8	11	6	22	17	18	18	21	21	20	24	13	0	0	203

BELL ATLANTIC NETWORK SERVICES, INC.

Patents By Year of Grant:	0	0	0	0	0	0	3	4	10	6	13	25	46	63	32	202
Patents By Year of Application:	0	0	0	0	0	5	12	9	7	24	93	34	17	1	0	202

TEXACO INC.

Patents By Year of Grant:	110	9	10	10	7	13	8	5	5	4	7	6	5	2	1	202
Patents By Year of Application:	130	11	6	8	10	5	5	4	7	9	5	2	0	0	0	202

E-SYSTEMS, INC.

Patents By Year of Grant:	80	13	8	6	6	7	7	7	7	5	19	14	8	11	2	200
Patents By Year of Application:	100	6	5	9	8	6	6	13	13	5	21	3	4	1	0	200

Other Organizations (35648)

Patents By Year of Grant:	37580	5145	6898	6485	8296	7108	7675	7434	7931	8461	8942	10150	10130	15461	16762	164458
Patents By Year of Application:	49679	6012	6707	7331	7864	8171	8447	8571	9206	10841	12961	13858	11805	2864	141	164458